

1 REMARKS

2 Status of the Claims

3 Claims 1 and 47-55 are pending in the present application, Claims 2-46 having been
4 previously cancelled, and new Claims 48-55 having been added in the present preliminary
5 amendment. Claim 1 has been amended to define an invention distinguishable from the cited art, and
6 Claim 47 has been amended to correct a grammatical error.

7 Rejection of Claims 1 and 47 as being Anticipated by Eismann

8 The Examiner has rejected Claims 1 and 47 under 35 U.S.C. § 102(b) as being anticipated by
9 Eismann (U.S. Patent 5,760,899). Applicants have amended Claim 1 to further distinguish over the
10 cited art, and as will be discussed in greater detail below, Claim 47 already distinguishes over the
11 cited art.

12 With respect to Claim 1, applicants have amended the claim to recite that "*light from the*
13 *imaging path that is incident on a different part of said TDI detector forms an image exhibiting a*
14 *different **relative** focus.*" Applicants agree that Eismann is somewhat similar to the present invention,
15 particularly when Figure 5 of Eismann is compared with applicants' Figure 2. However, the present
16 invention is indeed distinguished from Eismann, for the following reasons. Specifically, according to
17 Eismann's Figure 5, the imaging lens and focal plane array (the detector) are disposed in a **parallel**
18 relationship. That means while more than one image can be formed on the focal plane array, each
19 image that passes through the imaging lens and that is formed on the focal plane array *has the same*
20 *relative focus*, because the focal plane array is oriented in Eismann so as to receive light for both
21 images traveling the same distance from the lens. Assume for a moment that the object being imaged
22 is a baseball. As indicated in Eismann's Figure 5, more than one image of the baseball will be
23 produced on the focal plane array. Because the imaging lens and the focal plane array are parallel,
24 every image of the baseball formed on the focal plane array will exhibit the same relative focus. That
25 is, if one image of the baseball is in perfect focus, then all images of the baseball will be perfectly
26 focused. If one image of the baseball is out of focus, then all images of the baseball will be out of
27 focus to the same relative degree. This result is significantly different than what occurs in applicants'
28 invention. Note that as indicated in applicants' Figure 2, imaging lens 154 and detector 148 **are not**
29 **parallel**. The detector is not parallel to the imaging lens, but instead is disposed *at an angle relative*
30 *to the imaging lens*. Accordingly, when multiple images are formed on the detector, each of those

1 images will exhibit a different relative focus, since the light for one image formed on the top portion
2 of the detector travels a different distance to the detector from the imaging lens than the light for a
3 different image formed on the bottom of the detector. This configuration is schematically illustrated
4 in Figures 6A and 6B of applicants' disclosure.

5 As amended, Claim 1 clearly recites that images formed on different parts of the detector
6 exhibit a different relative focus. Eismann's apparatus cannot achieve this unless the imaging lens or
7 the focal plane array is moved relative to the other, so that the imaging lens on the focal plane array
8 are no longer parallel. Thus Claim 1 as amended clearly distinguishes over the cited art.
9 Furthermore, there simply is no evidence that it would have been obvious to one of ordinary skill in
10 the art to modify Eismann's configuration of the imaging lens and the focal plane array to achieve a
11 configuration that would enable different images on the focal plane array to exhibit different relative
12 focuses.

13 Referring now to Claim 47, applicants respectfully note that Claim 47 recites *a focusing lens*
14 *disposed in the collection path to receive light that is passed through the collection lens, producing*
15 *focused light that is directed along an image path*. Based on Eismann's Figure 5, the imaging lens
16 disclosed by Eismann corresponds to the focusing lens recited by applicants. Logically the image
17 path is the light path between the imaging lens (or focusing lens) and the detector, because the
18 detector is disposed in the image path. Claim 47 further recites that the detector is *disposed at an*
19 *angle relative to the focusing lens*. Eismann simply does not teach or suggest this configuration (in
20 Eismann's configuration the detector is disposed at an angle relative to the collection lens, and is
21 parallel relative to the imaging lens). The configuration disclosed by Eismann is simply not
22 equivalent to the structure recited by applicants, nor is there any evidence that one of ordinary skill in
23 the art would have been led to modify Eismann's apparatus to achieve what is claimed by applicants.

24 Eismann's apparatus is not equivalent to applicants' imaging system as defined in Claim 1,
25 because Eismann's apparatus cannot achieve different images on a detector where each image
26 exhibits a different relative focus. Because Eismann's imaging lens is parallel to the detector, each
27 different image on his detector will exhibit the same relative focus. Eismann's apparatus is not
28 equivalent to applicants imaging system as defined in Claim 47, because Claim 47 positively recites
29 that the detector is disposed at an angle relative to the focusing lens/imaging lens, whereas Eismann
30

clearly indicates the focusing lens/imaging lens is disposed parallel to the detector. Accordingly, the rejection of Claims 1 and 47 is being anticipated by Eismann should be withdrawn.

Patentability of Added Claim 48-55

Newly added Claims 48-55 are fully supported by the specification as filed, and do not require the introduction of new matter. Each newly added claim is distinguishable over the cited art for the reasons provided below.

Claims 48, 50, and 55 recite that an output signal propagates over the TDI detector with a velocity that is substantially asynchronous with that of a corresponding image of the object formed on the TDI detector, i.e., the TDI detector is not synchronized to the velocity of an object in the conventional fashion. Eismann does not teach or suggest such asynchronous synchronization.

New Claim 49 recites an imaging system comprising an imaging lens and a detector in which a detector is disposed so that the detector *is not parallel to a longitudinal axis of the imaging lens, such that light from the imaging lens that is incident on a first part of said TDI detector forms a first image, while light from the imaging lens that is incident on a second part of said TDI detector forms a second image, the first image and the second image being characterized by exhibiting a different relative focus.* Thus, Claim 49 uses different language to convey the structural difference between Eismann's apparatus and applicants' imaging system that was discussed in detail above, with respect to applicants' traverse of the rejection of Claims 1 and 47.

New Claim 51 depends on Claim 50 and recites that the imaging system further comprises a collection lens. New Claim 51 is patentable for the same reasons as Claim 49.

New Claim 52 recites an imaging system comprising an imaging lens, and a detector that is disposed "*at an angle relative to the imaging lens, such that light from the image path that is incident on a first part of said detector forms a first image, while light from the image path that is incident on a different part of said detector forms a different image, the first image and the different image exhibiting a different relative focus, such that if the first image is in focus, the different image is not in focus, and if the different image is in focus, the first image is not in focus.*" Thus, Claim 52 uses different language to convey the structural difference between Eismann's apparatus and applicants' invention, as discussed in detail above with respect to applicants' traverse of the rejection of Claims 1 and 47.

1 New Claim 53 depends on Claim 52 and recites that the imaging system further comprises a
2 collection lens. New Claim 54 depends on Claim 52 and recites that the detector comprises a time
3 delay integration (TDI) detector. New Claims 53 and 54 are patentable for the same reasons as
4 Claim 52.

5 Should any further questions remain, the Examiner is invited to telephone applicant's attorney
6 at the number listed below.



Respectfully submitted,

Michael C. King
Registration No. 44,832

13 MCK/RMA:lrg

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